

BIODESIGN CHALLENGE

Program Overview





Biodesign Challenge is an international student competition that is shaping a new generation of biotechnologists. We partner high school and university students with scientists, artists, and designers to envision transformational applications in biotech.

GROW THE FUTURE

In 2021 students from across the globe will present their projects to leading thinkers in academia, industry, art, and design before an online audience of over 5,000. Teams compete for prizes, including the coveted grand prize—the Glass Microbe. In previous years, the BDC Summit took place at the **Museum of Modern Art** in New York City.

BDC teams are already prototyping new ideas in medicine, textiles, beauty, food, manufacturing, and more. Join us in exploring how biotech might revolutionize the future of industries and production.

BIOTECH NEEDS DESIGN

From the environmental crisis, to the pandemic, to the acceleration of biotechnology, we are in a period where biology is driving massive change. We need to be smarter about how we navigate our role in the living world and how biology can be used as a technology.

Society needs interdisciplinary thinkers for the next solutions and to help understand their impacts. BDC bridges art, design, and biology to develop the first generation of biodesigners who cross disciplines, anticipate promises and pitfalls, engage the public, and innovate using biotechnology.



Program Goals

1. Create a community of collaboration among artists, designers, and biologists
2. Seed the first generation of biodesigners
3. Build meaningful public dialogue about biotech and its uses



HOW IT WORKS

Throughout the spring semester of the academic year our organizers work with university and high school instructors to design curricula, partner with experts, and mentor students as they develop their projects.

Participating classrooms produce 100+ unique projects each year. Among them, each school chooses one team to represent their institution at the BDC Summit.

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As part of our support for alumni, we help launch projects into their next phase of development through opportunities with museums, galleries, investors, and accelerator programs.

BDC projects have both evolved into multi-million dollar startups and exhibits at prestigious venues around the world.



Timeline

Note: Most schools follow this timeline. BDC can be flexible to your school's schedule

Sep 2020

Apr - Jan

Registration

Schools seeking to participate in the Biodesign Challenge can register through January 15, 2021.



Oct

Fall Semester

Regional Symposia

BDC Hubs across the globe kickoff events focused on regional communities.

Nov

Dec

Jan - Mar

Classes Begin

Classrooms challenge students to envision biotech futures. To make sure their visions respond to real problems with feasible designs, each school is paired with an expert consultant.

Mid-Semester

Students Form Teams

Students break up into groups of 3-5 to create projects.

March – April

BDC Webinar Series

BDC hosts online webinars each year featuring talks by experts and pioneers in the biodesign community.

Jan 2021

Feb

End of Semester

Finalists Chosen

Instructors choose one team to represent the school at the BDC Summit.

Mar



Apr

May

Jun

Jun 21-26

BDC Summit

Finalists showcase their designs at a summit that brings together artists, designers, scientists, and entrepreneurs to judge the teams.

Growth in Participation

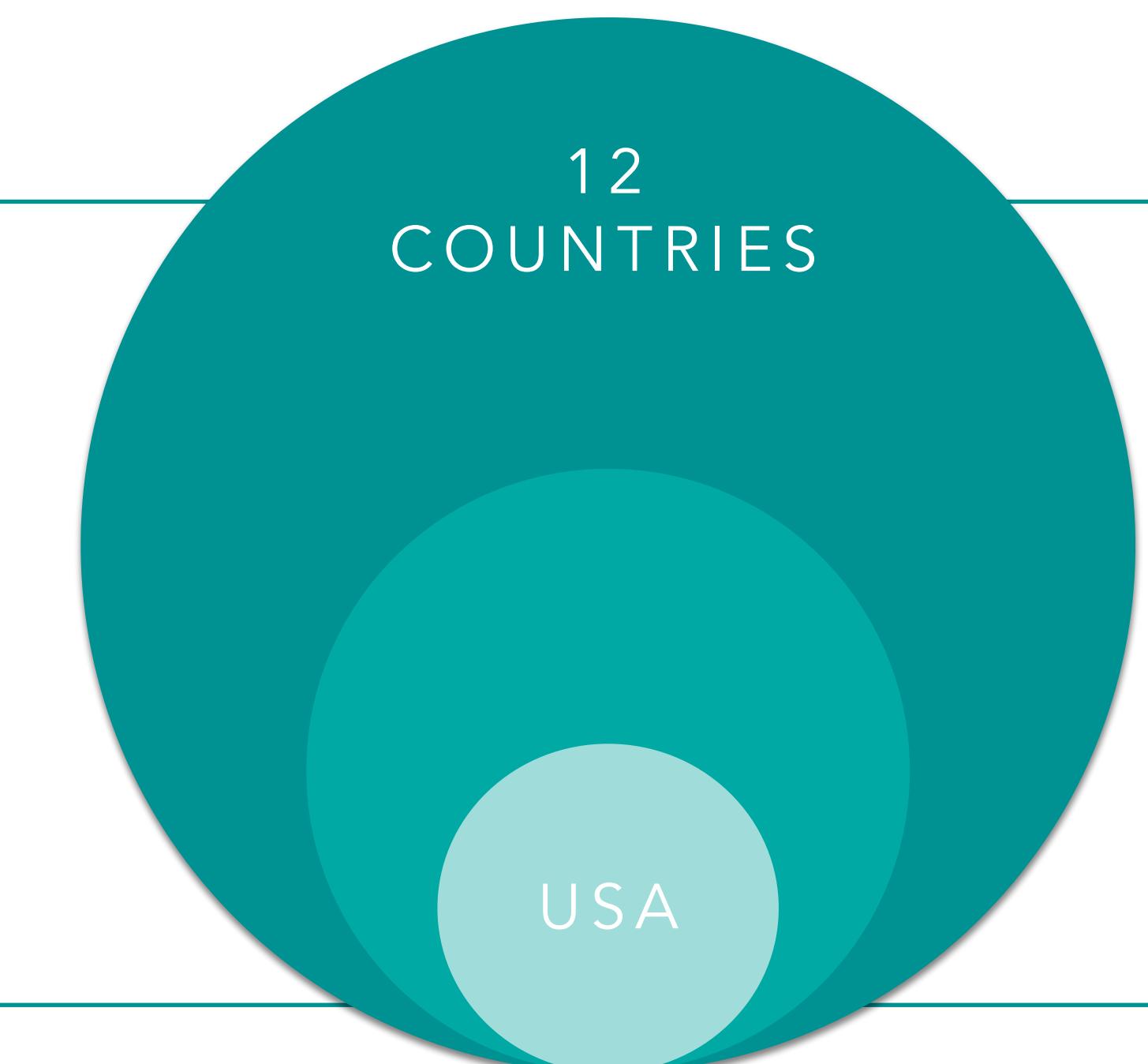
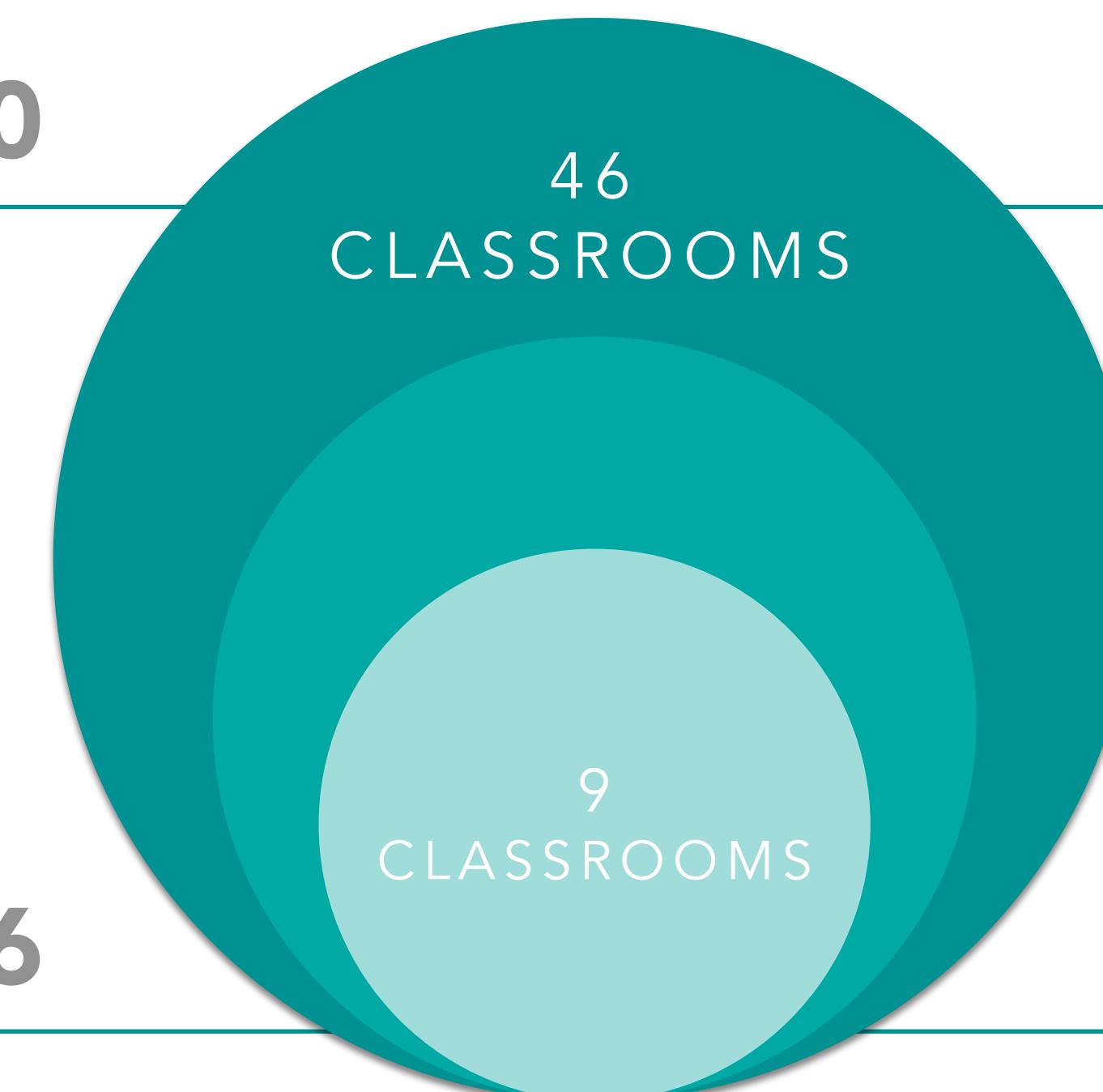
5X
Growth
in 5 Years

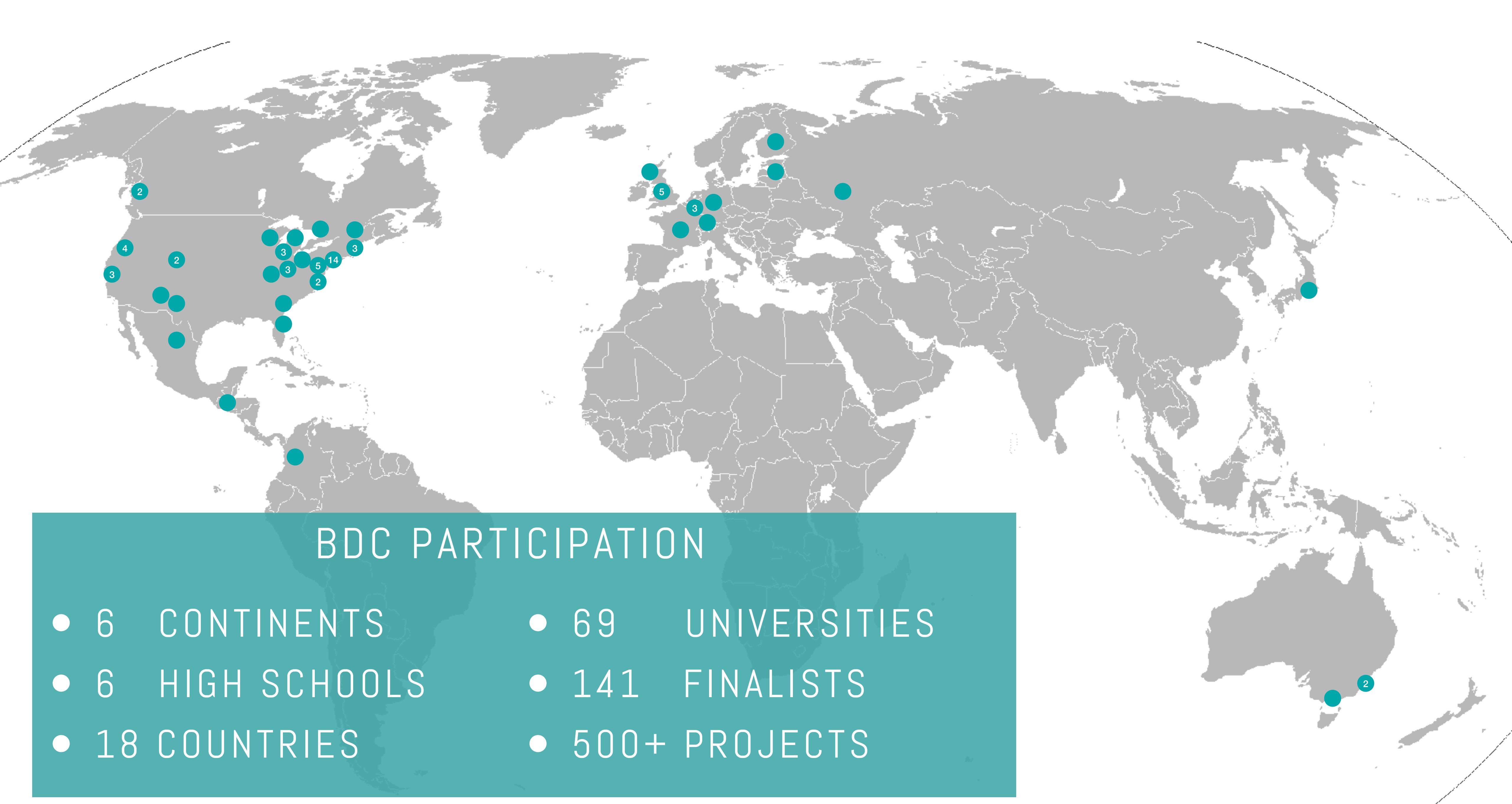
2020

2016

+400%

+1100%





PANELISTS, SPEAKERS, AUDIENCE

Over 400 people attend our Summit at MoMA, and 5,000+ have attended our online Summit, including leaders from media, industry, academia, and the arts who are pioneering biotech and fashion, new materials, agriculture, sustainable design, and more.

Judges and speakers include 50 premiere scientists, designers, artists, curators, and entrepreneurs from institutions across the globe, including fashion brand **Stella McCartney**, biotech company **Ginkgo Bioworks**, MoMA, and **The Cooper Hewitt Museum of Design**.



ORKAN TELHAN
Design Professor
University of Pennsylvania



PAOLA ANTONELLI
Senior Curator
Museum of Modern Art



CLAIRE BERGKAMP
Head of Sustainability
Stella McCartney

WHAT STUDENTS ARE SAYING

Never before had I had a sense of being able to create something truly new and relevant to a field (even when I had no clue of what I was doing at times). This is something that I had never been able to experience in a class.

- Student survey response, UPenn

Working within a multidisciplinary team was the most valuable experience for me. Discovering my team members' many talents and combining them with my own made for entirely new and exciting work that I could never have produced by myself.

- Student survey response, HBBE UK



STUDENT SURVEYS

After taking the BDC course, I better see the value of collaboration between scientists and other stakeholders (such as artists and designers) to design new uses for biotech.



I recommend that my university continue participating in the BDC.



After taking the BDC course, how would you characterize your level of understanding in biotech? (Select those that apply)



BDC in the News

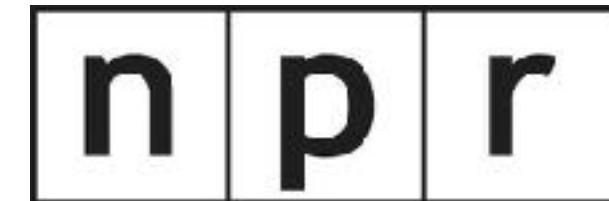
11M

READERS

40M

VIEWERS

NETFLIX



FAST COMPANY

Forbes

Le Monde

Smithsonian

hulu

FOX

Core77

WWD

POPULAR
SCIENCE

WSJ



NowThis Future
June 26, 2017

This artificial womb can grow a baby inside your living room



22M

IMPRESSIONS

259K

SHARES

Program Recognition



Winner, 2019

**Best Employer for Nurturing
21st-Century Skills**

QS Reimagine Education Awards
“The Oscars of Education”

Alumni Recognition

Awards

- National Geographic Chasing Genius
- LVMH Disruptive 10
- Postcode Lottery Green Challenge
- American Association of Textile Chemists & Colorists Awardee
- Ars Electronica Grand Prix
- Bio Art & Design Winner
- Core 77 Design Awards: Community Choice & Design Education Initiative
- L'Oreal Women in Science Award

Accelerator Programs

- THRIIVE Accelerator
- Rebel Bio Accelerator
- Fashion for Good Accelerator
- Plug & Play
- Innovation RCA
- Hello Tomorrow

BDC STARTUPS



AlgiKnit

FIT, 2016
Overall Winner
Raised \$2.2M
7 Staff

olombria

RCA, 2017
Raised \$200K+
3 Staff



FIT, 2018
Winner: Outstanding
Presentation
Awarded €250K
H+M Foundation



U. de los Andes, 2019
Overall Winner
Contender: Hello
Tomorrow Prize
Patent Pending



BDC IN MUSEUMS

BDC alumni have showcased their projects at museums, festivals, and gallery shows around the world, including:

- Ars Electronica
- London Design Festival
- MoMA
- Dutch Design Week
- NYCxDesign
- MIT Media Lab
- Tech Museum of Innovation
- RISD Biodesign Exhibition
- FIT Museum
- The Gregg

Online Content

We launched BIODESIGNED, our Biodesign Media hub in May 2020.

The online hub broadcasts news about projects and research, aggregates jobs and opportunities, and engages a larger audience in broader discussion about biodesign.

Authors have included luminaries in art, design, and biology, including architect David Benjamin, artist Heather Dewey-Hagborg, and curator Michelle Millar Fisher, among others.

Projected Impressions
250K



PROJECT MATRIX

Student projects reach beyond the expectations of familiar business competitions. Projects exemplify innovative design that spurs dialogue about desires around emergent biotech.

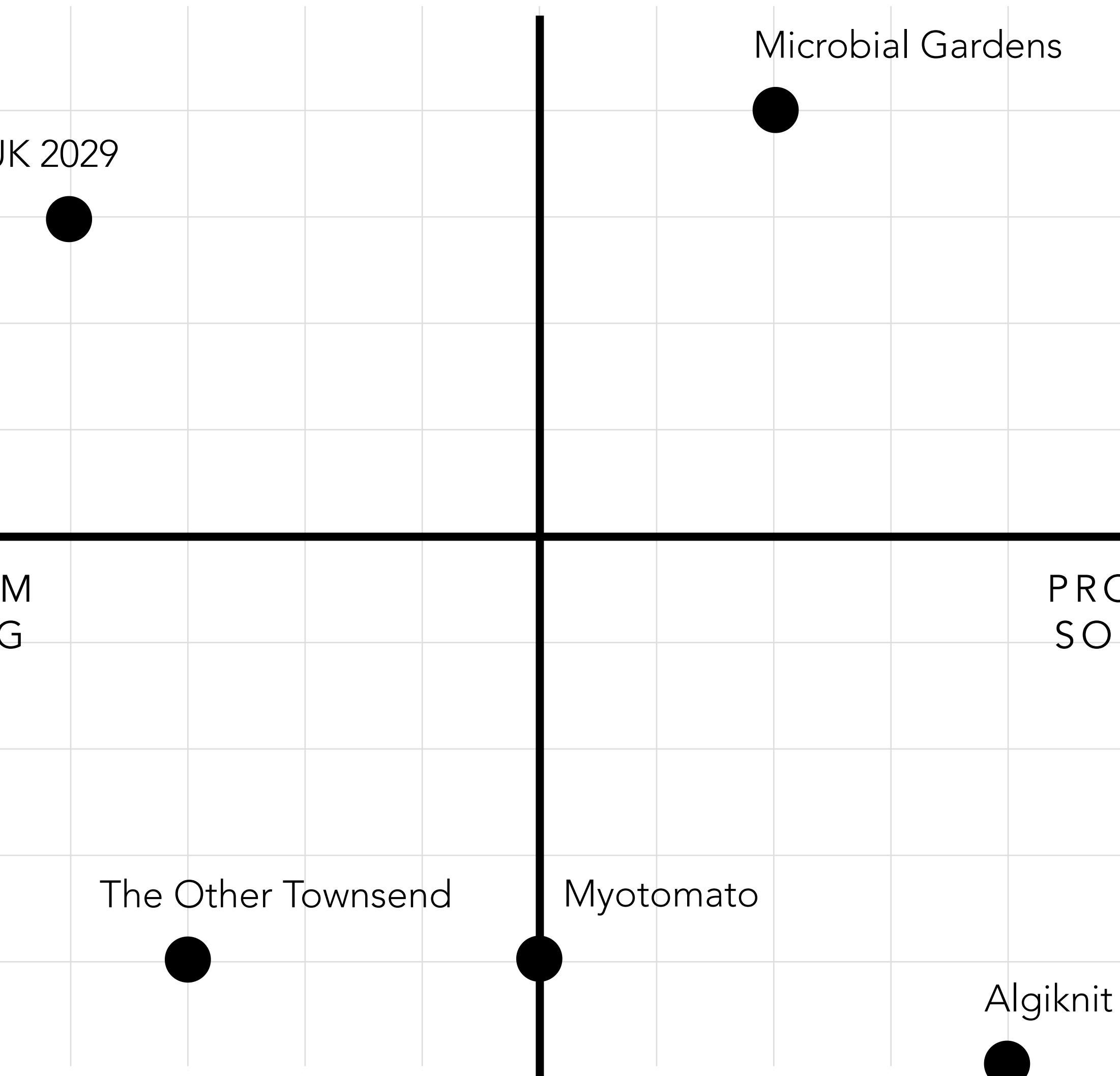
The competition is a forum for experiments in imagination. BDC students not only explore new biotech solutions but delve into technology's inherent challenges. While some projects ask how biotech might be used today, others anticipate how advances in research may allow it to be used 10-20 years from now.

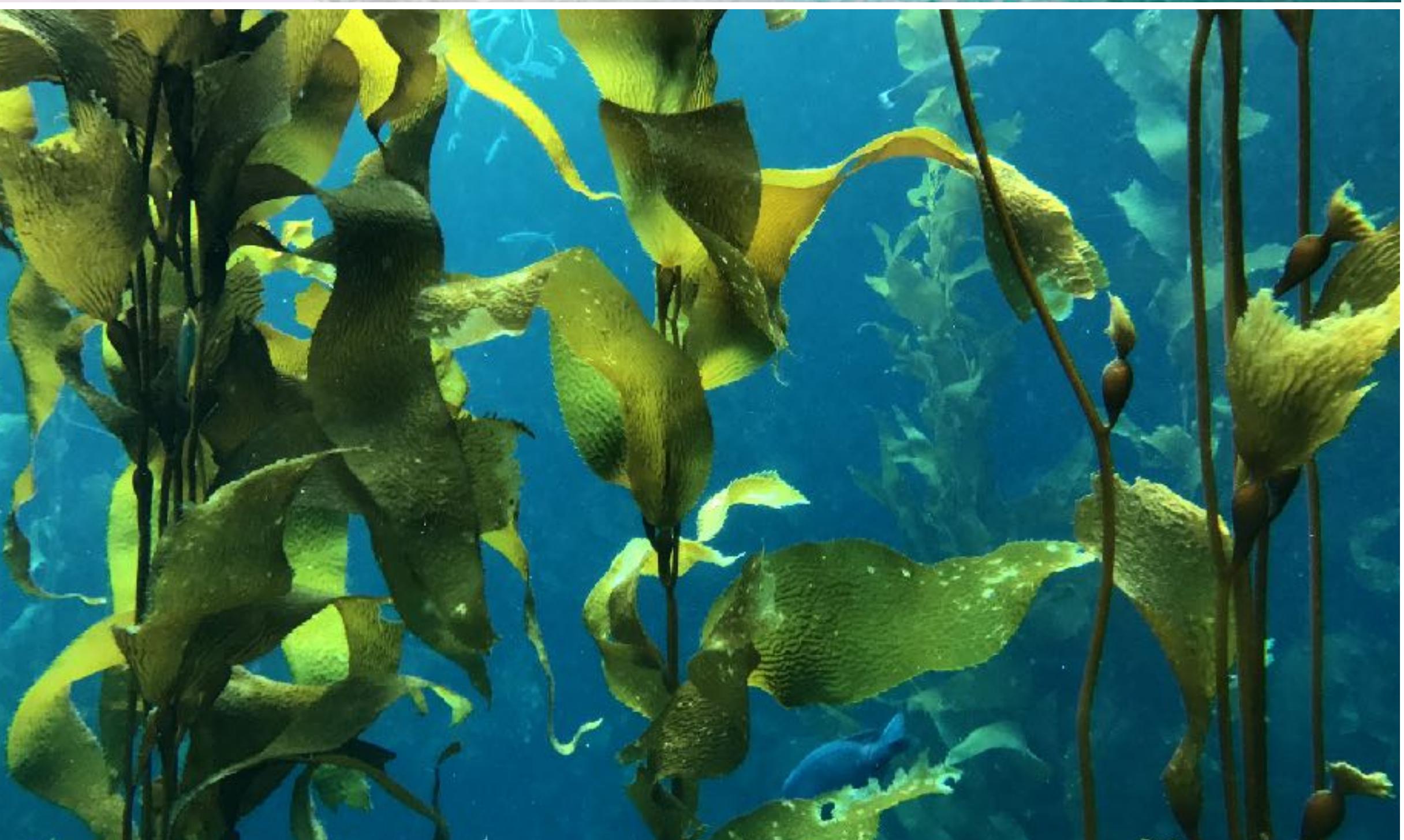
SPECULATIVE

ACTUAL

PROBLEM
FINDING

PROBLEM
SOLVING





BDC
Entrepreneurs

AlgiKnit

Fashion Institute of Technology
New York, USA

\$2.2 Million

Venture Funding from RebelBio Accelerator
and SOSV Ventures

Winner of the NATIONAL GEOGRAPHIC
Chasing Genius Award

AlgiKnit is a biomaterials company that creates durable yet rapidly degradable yarns for the fashion industry. These materials are derived from kelp with the goal of creating a circular product lifecycle.

algiknit.com



BDC
Entrepreneurs

PseudoFreeze

Universidad de los Andes
Bogota, Colombia

Overall Winner 2019
Project showcased at Hello Tomorrow,
Paris



PseudoFreeze engineered a refrigeration system used for the transportation of vaccines, which harnesses energy from the INA protein from the bacterium *Pseudomonas syringae*. It requires no batteries or outside power source.

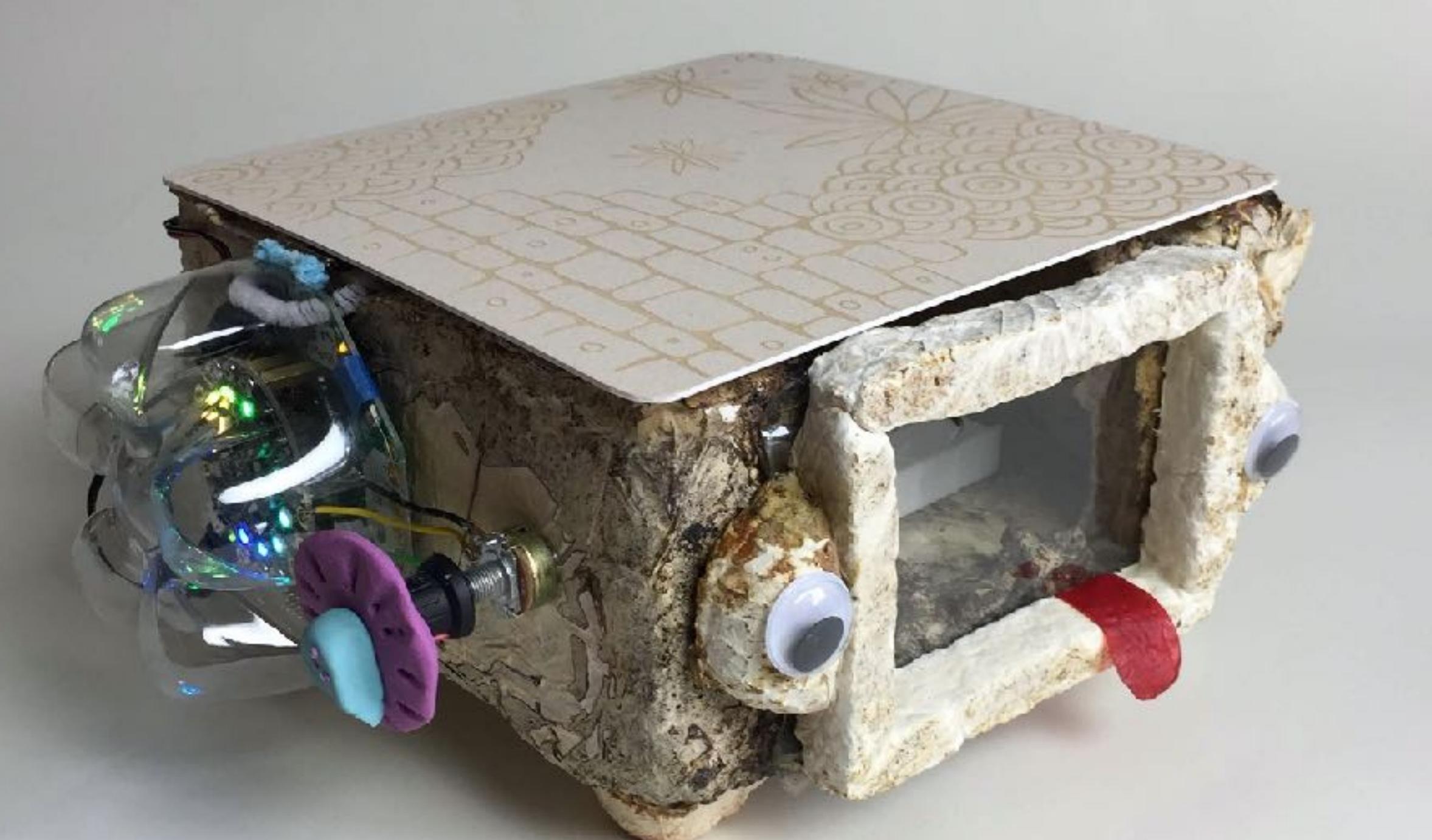
BDC
Finalists

GIY Bio Buddies

Nest Maker Space
San Jose, CA

Runner Up 2019
Project on display at LEGO Headquarters

GIY Bio Buddies is a kit for children that allows them to make and design toys with biomaterials. The goal is to move the toy industry away from non-biodegradable plastics through explorations with kombucha leather and mycelium.



BDC
Finalists

Myotomato

School of Visual Arts
New York, NY

Runner Up 2016
Project showcased at venues including
MIT Media Lab, Pioneer Works,
NYCxDesign, Emerge Festival.

MyoTomato proposes bioengineering edible plants to produce myoglobin, a protein normally found in meat.



REGISTER BDC 2021

Join an international competition and education program for high schools and universities that introduces students to the intersections of biotechnology, art, and design.

By registering for the competition, your university or high school gains access to our resources and network.

Registration	Cost	Deadline
Early Registration	\$1,250 USD	September 15th, 2020
Regular Registration	\$1,500 USD	December 18th, 2020
Late Registration	\$2,000 USD	January 15th, 2021



THANK YOU

www.biodesignchallenge.org

FIND US ONLINE

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